

# Oil Field Environmental Incident Summary

**Incident:** 20150806164451      **Date/Time of Notice:** 08/06/2015 16:44

**Responsible Party:** SAMSON RESOURCES COMPANY

**Well Operator:** SAMSON RESOURCES COMPANY

**Well Name:** NOVA 4-9-163-98H

**Field Name:** CANDAK

**Well File #:** 19530

**Date Incident:** 8/5/2015      **Time Incident:** 03:30

**Facility ID Number:**

**County:** DIVIDE

**Twp:** 163

**Rng:** 98

**Sec:** 4

**Qtr:** NW NE

**Location Description:** crop land and grasses, Christensen SWD Salt Water Gathering System, 48.979544, -103.413437

**Submitted By:** Brad Rogers

**Received By:**

**Contact Person:** Barry Nelson  
370 17TH ST. SUITE 2900  
DENVER, CO 80202-5612

**General Land Use:** Cultivated

**Affected Medium:** Topsoil

**Distance Nearest Occupied Building:**

**Distance Nearest Water Well:**

**Type of Incident:** Pipeline Leak

**Release Contained in Dike:** No

**Reported to NRC:** No

	Spilled	Units	Recovered	Units	Followup	Units
Oil						
Brine	4260	Barrels	225	Barrels	225	barrels
Other						

**Description of Other Released Contaminant:**

**Inspected:**      **Written Report Received:** 11/17/2016      **Clean Up Concluded:** 10/30/2015

**Risk Evaluation:**

No immediate risks associated with release

**Areal Extent:**

650' x 350'

**Potential Environmental Impacts:**

Potential for soil contamination from produced water and loss of vegetation in release area.

**Action Taken or Planned:**

Produced water gathering system was shut-in. Produced water on the surface will be sucked up with vacuum trucks and disposed of. Soil samples will be collected once free water is removed. Remediation will be determined based on soil sample results.

**Wastes Disposal Location:** Produced water collected will be disposed of at company SWD. Any contaminated soils removed will be disposed of at an approved disposal facility (Smokey Butte or 13-Mile Landfills)

**Agencies Involved:** NDIC, NDDOH

**Updates**

**Date:** 8/6/2015      **Status:** Inspection

**Author:** Kangas, Kathleen

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Onsite at 11:00. 61 degrees, drizzling, cloudy, light wind. Met company reps. Vac truck is on-site removing impacted water. Affected area appears to be mostly grass/weeds with some surrounding cropland of soybean. Company has constructed a dry ditch/berm around apparent point of impact. Company estimates size of impact is 800X800 feet.

Field Electrical Conductivity readings of soil in soybean field on the outside, and apparently un-impacted, of this ditch, range from 668 uS/cm to 3.36mS/cm in depths ranging from 3 inches to 24 inches. Field Electrical Conductivity readings of water within the ditch/berm (apparent impacted area) ranged from 298 mS/cm to 316 mS/cm.

A small slough is located approximately a few hundred feet north of the impact location. Low range chloride strip field readings of slough water show less than 33 ppm chloride.

High range chloride strip field readings of the water at the point of impact show greater than 6536 ppm.

The pipeline is approximately 4-5 feet deep, and 6 inches around.

Company will continue cleanup and provide NDDoH with sample results and progress of remediation.

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**Date:** 8/6/2015    **Status:** Correspondence

**Author:** Suess, Bill

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

NDDoH staff are on-site to assess any potential impacts to water sources. A press release has been issued. Additional follow-up is required.

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**Date:** 8/6/2015    **Status:** Reviewed - Follow-up Required

**Author:** Crowdus, Kory

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Release, due to a pipeline leak, impacted areas off location. Followup is required.

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**Date:** 8/10/2015    **Status:** Inspection

**Author:** Stockdill, Scott

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Arrived on location 15:00 8/10/2015.

Salt crystals present in soil and on vegetation in area with a strong produced water smell present. Wetland vegetation present in the impact area. Contractors on-site with earth moving equipment. Impacted edge of pea field.

More follow-up is necessary.

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**Date:** 8/10/2015    **Status:** Reviewed - Follow-up Required

**Author:** Washek, Sandi

**Updated Oil Volume:**

**Updated Salt Water Volume:** 4260.00 barrels

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Company rep called and informed the NDDoH as of August 10 that they have removed 1063 barrels of liquid from the pipeline break area. In addition, they are in the process of removing about 1 foot of soil in the field where the break occurred. Soil will be disposed of at an approved landfill. Company's environmental team will be on site today for assessment.

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**Date:** 8/31/2015    **Status:** Inspection

**Author:** Washek, Sandi

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Arrived on-site at 12:20 pm Sunny 68 degrees wind out of the NW at 20 miles/hr. No one was on-site at the time of the inspection.

The soil on-site has been scraped down with about three feet of soil removed. There is also a water tank on-site with liquid in it and 2 bulldozers. A large hole, indicating where the line break occurred, has a snow fence around it because it is still exposed.

( GPS N 48.97907 W 103.41504).

It had rained the night before and in the work area were two surface puddles. One puddle was located at the GPS N 48.98003 W 103.41444 and the other located at N 48.97923 W 103.41493.

Throughout the area there were visible salt crystals on top of the soil.

Company will need to provide remediation plan to NDDH for the site.

More follow-up needed.

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**Date:** 9/15/2015    **Status:** Awaiting Documentation

**Author:** Washek, Sandi

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Talked to company rep pertaining to cleanup plan. Company is working on the plan, in addition to a plan to clean up and abandon the existing gathering pipeline. The company found that the pipe break occurred at a welded seam of the pipe. The remediation company is Absolute Safety Solution. The company rep indicated they might be looking at using liquid gypsum (ALC2) or calcium, gypsum and citric acid as an application for the site. NDDoH rep informed the company rep that NDDoH will need a copy of the clean-up plan and MSDA sheet/ information of any product that will be applied (prior to application) to ensure it will not impact any waters of the State. Also was informed the company has been in touch with the landowner, and he wants the area cleaned up to what it was prior to the spill. Additional followup will be needed on this site.

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**Date:** 9/17/2015    **Status:** Inspection

**Author:** Washek, Sandi

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Needs additional follow-up inspection to ensure remediation of the site.

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**Date:** 10/20/2015    **Status:** Correspondence

**Author:** Washek, Sandi

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Company and NDDoH reps held a telephone conference call reviewing progress on site, the cleanup plan, and lab test results for the Christensen SWD gather line. The company has constructed a berm around the site and is collecting all rain and runoff water from the site. About 2,500 barrels of liquid have been removed to date. The company will work on additional soil removal in two locations where elevated levels of chlorides are still occurring. The company also plans to do some biosols remediation work. The company will conduct additional monitoring of the site through 2016. Soil sampling will be of the surface and root zone. Reestablishment of the vegetation (crop cover) also will need to occur. Additional followup of the site will be needed.

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**Date:** 1/27/2016    **Status:** Inspection

**Author:** Wax, Pete

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

On site 11:30, off site 12:14. Clear, 34 degrees, 25-40 mph NW wind. Located release site in bean field. Drove along pipeline row and collected photographs. Field appears to be nicely reshaped to original contour. Needs additional follow-up to ensure field productivity.

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**Date:** 2/23/2016    **Status:** Correspondence

**Author:** Washek, Sandi

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Company rep provided NDDoH a copy of a letter sent to U.S. EPA. The letter was the company's response to EPA's questions pertaining to the NOVA 4-9-163-98H incident.

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**Date:** 3/14/2016    **Status:** Inspection

**Author:** Washek, Sandi

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Met with landowner at 9:35 a.m. to 11:00 a.m. Weather was sunny with wind out of the NW at 20 mph, and temperature was 41 degrees F. The landowner and NDDoH inspector walked the field impacted by the pipeline break. Noted there was still snow fencing, fence posts and some hoses on site that need to be cleaned up. The area of impact has had black soil and sod added to the area. The field was rough and soft in some areas due to snow melt in the area over the past couple of weeks. Need to reevaluate once the soil starts drying out. Landowner and NDDoH also met with the renter of the land and talked about planting a cover crop this summer and his plan for the surrounding cropland. Renter will let NDDoH know what and when he plants, so NDDoH can monitor plant growth on the site. The landowner stated he just wants the land back to the way it was for future generations.

NDDoH inspector contacted Samson Resources rep and let him know about the garbage on site that needed to be cleaned up. Company rep indicated he will get that done. Additional follow-up will be needed this summer to ensure vegetation growth.

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**Date:** 6/27/2016    **Status:** Inspection

**Author:** Souder, Taylor

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Arrived on site at 1430. Field where release occurred has been planted with corn. There are noticeable bare spots. Please refer to photos in report folder.

**Updated Oil Volume:**

**Updated Salt Water Volume:**

**Updated Other Volume:**

**Updated Other Contaminant**

**Notes:**

Arrived on site at 12:53 p.m. Weather was partly cloudy with wind out of the SW at 5 mph and temperature of 89 degrees F. Walked the site. Corn has been planted in the field surrounding the impacted site. Corn in the area looks very good, except for directly to the south of the impacted site where the corn appears shorter than the rest of the crop. However, this could be due to excess rain occurring in the area. The impacted area has foxtail and kochia growing in it. Also observed salt crystals in two small areas along the south side of the area. Some areas of the site are still very soft to walk on.

Collected soil conductivity reading in four areas.

Background was 223 microsiemens (uS) - GPS location N48 58.802' W103 24.916'.

1st location - middle of the impacted area - GPS N48 58.768 w 103 24.885

4" = 1613 uS, 8" = 2.41 millisiemens (mS), 12" = 2.86 mS, 16" = 3.51 mS

2nd location - along side of impacted area GPS location N48 58.747' W 103 24.918'.

Soil conductivity readings: 4" = 3.22 mS, 8" = 4.88 mS, 12" = 4.94 mS, 16" = 4.68 mS

3rd location - N48 58.747' W103 24.918'

Soil conductivity readings: 4" = 1243 uS, 8" = 3.02 mS, 12" = 2.85 mS. Could not push probe in any further.

Also collected a soil sample from the impacted area.

Additional follow-up will be needed for this site.